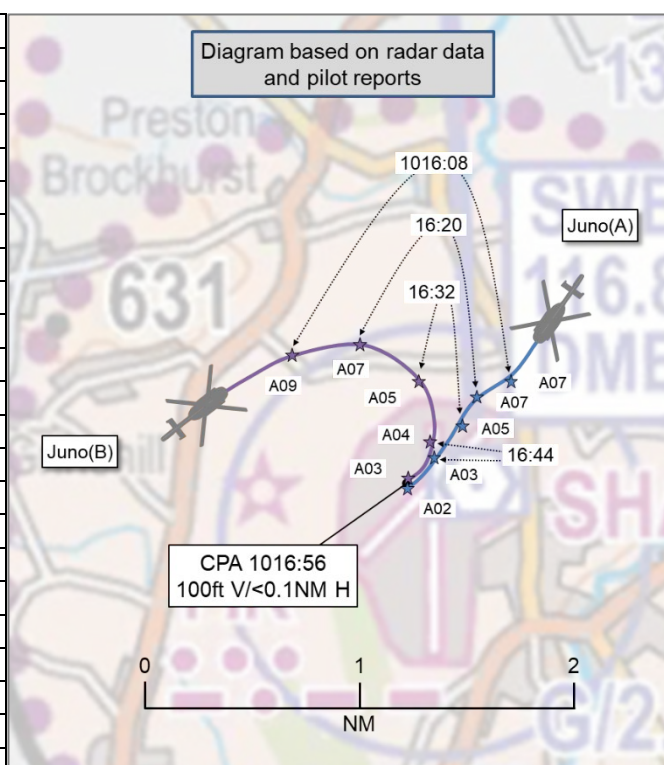


AIRPROX REPORT No 2022015

Date: 09 Feb 2022 Time: 1017Z Position: 5248N 00240W Location: RAF Shawbury – elev 248ft

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Juno ¹ (A)	Juno (B)
Operator	HQ Air (Trg)	HQ Air (Trg)
Airspace	Shawbury ATZ	Shawbury ATZ
Class	G	G
Rules	VFR	VFR
Service	ACS	ACS
Provider	Shawbury Tower	Shawbury Tower
Altitude/FL	300ft	300ft
Transponder	A, C, S+	A, C, S+
Reported		
Colours	Black, yellow	Black, yellow
Lighting	Anti-col, nav, HISL	NK
Conditions	VMC	VMC
Visibility	>10km	NK
Altitude/FL	150ft	500ft
Altimeter	QFE (1013hPa)	NK
Heading	230°	NK
Speed	30kt	NK
ACAS/TAS	TAS	NK ²
Alert	Unknown	Unknown
Separation at CPA		
Reported	0ft V/50-70m H	Not assessed
Recorded	0ft V/<0.1NM H	



THE JUNO(A) PILOT reports being tasked as the right-hand-seat handling-pilot for a trainee Qualified Helicopter Crewman Instructor (QHCI) mutual training sortie, to practice demonstrating circuit and circuit emergencies. They were operating as single pilot with two Trainee QHCI's operating in the cabin. The sortie was conducted in the circuit to RW23 at RAF Shawbury on the quiet frequency (Stud 3, quiet/discrete Tower frequency for use when operating on the airfield). As is normal at RAF Shawbury, they were flying circuits in Area Right to a landing point adjacent to the active runway. It had been a busy morning with other visual and instrument Juno helicopters departing and arriving at the airfield. They had been conducting circuits for approximately one hour when downwind heard ATC call joining aircraft from Harmer Hill (Western Gate) and another aircraft on an instrument approach to RW23 (ATC passes pertinent information on joining or departing traffic to anyone operating on stud 3). As they were turning final, further traffic was called joining from Harmer Hill. They visually identified the first traffic, which then crossed well ahead, crossing the runway and establishing in Area Left. When established on final at around 150ft, they watched the second helicopter approaching as the QHCI continued to demonstrate and patten the approach. This aircraft descended and turned toward them and as it was almost abeam and converging, the Juno pilot brought it to the attention of the crewman. Because the other Juno was now at approximately the same height and still closing from the right, the separation appeared to reduce to approximately 50-70m. The Juno pilot called "going around". To avoid infringing the runway and possible IF traffic they initially accelerated forward to increase separation, whilst the other Juno continued to make an approach to the RW18 threshold, parallel to them into wind. Having ensured that separation was now increasing they continued the approach beyond the intended landing point and established a 10ft hover.

The pilot assessed the risk of collision as 'Medium'.

¹ Juno is the military designation for the EC135.

² Assumed to be a TAS.

THE JUNO(B) PILOT reports returning to RAF Shawbury after an advanced general handling sortie, with the trainee as handling pilot (HP) in the right-hand-seat. They requested recovery through Harmer Hill for Area Left, which was granted, although after debriefing the event the crew could not recall the full radio reply from ATC. As the aircraft passed the obelisk and the HP was about to request 30 seconds to cross RW23, they were told by ATC to join for Area Right instead. This radio call was very weak/broken and the crew asked for them to repeat, which they did. The crew confirmed they would join for Area Right and turned right to join for the 'playstation' markers on RW18. At this point the Captain (NHP) saw an aircraft on long final, running in on runway direction, which he believed initially to be the IF traffic, as reported by ATC. As the 2 aircraft started to converge, the Captain realised that the aircraft in question was circuit traffic approaching Area Right and took control of the aircraft. The other aircraft was approaching the furthest right hand marker (1 of 2 available) and therefore they were now caught on the inside, so reduced speed and continued the approach to the RW18 threshold, with the other aircraft in sight throughout. At no point did any of the crew believe that the aircraft was within the Airprox remit.

The pilot perceived the severity of the incident as 'Low'.

THE SHAWBURY TOWER CONTROLLER reports ATC was informed that a pilot flying circuits in the main operating area had reported an Airprox with a helicopter joining the main operating area, which had cut in front of them whilst on final. The Airprox was not made known to ATC at the time of occurrence. RW23 was in use, BLU³ conditions. One helicopter operating on Stud 3, quiet frequency, flying circuits in the main operating area and radar traffic was inbound on PAR to land. Three other helicopters joined from the western VFR gate, one after the other to join for dispersal. Traffic Information was passed to all three aircraft about the main operating area traffic and the helicopter on Stud 3 in the main operating area was told about all three helicopters joining for dispersal. The range of the radar traffic was also broadcast to all aircraft. Due to the proximity of the radar traffic inbound to land, the second helicopter joining would have been unable to conduct '30 seconds to cross'. The controller therefore instructed them to join for Area Right. Meanwhile they prioritised their focus on the first helicopter, to which they had given a crossing clearance, ensuring it vacated the centreline in preparation to issue the clearance to the radar traffic that had been given a continue. The third helicopter then called visual with the radar traffic that was short final to land and requested to cross behind. Clearance to cross behind was given. The controller thought they may not have updated the change of intentions for the second helicopter on Stud 3, due to prioritising the issue of a radar clearance, but they wouldn't expect an aircraft to cut in front of an aircraft on final, where joining traffic gives way to main operating area traffic and can land anywhere in the main operating area (except a special operating area unless notified by the pilot). It was not apparent that the helicopter flying circuits had experienced an Airprox.

The controller perceived the severity of the incident as 'Low'.

THE SHAWBURY SUPERVISOR reports that whilst not witnessing the Airprox, they received a phone call from one of the pilots asking for clarification of events. They had spoken to the other pilot involved who had said that they hadn't been told about the circuit traffic. Two Supervisor qualified controllers were tasked to check the R/T recordings and reported back that Traffic Information had been passed to the joining traffic. This was relayed back to the pilot. Later in the afternoon, ATC was informed that an Airprox had been filed. The Supervisor reviewed the entire scenario. All joining instructions and Traffic Information had been passed on both stud 2 [Tower] and stud 3 [quiet] frequencies, the helicopter in question would have heard the circuit traffic information for a second time as another helicopter joined seconds after they had. The controller correctly assessed that the 30 seconds to cross profile would not have been possible, due to the range of the radar traffic, so instructed the helicopter pilot to make their approach to Area Right. Whilst this change of intention was not broadcast on stud 3, the Supervisor did not consider it to be a factor because it would be expected that the joining pilot would safely integrate with the circuit traffic and the other pilot had previously stated during the initial conversation that they were visual with the traffic. Helicopters at Shawbury routinely operate in close proximity, so the Airprox

³ Cloudbase (SCT or more) >2500ft agl, visibility >8km.

may not be apparent from the Tower controller's view point. No declaration was made on frequency and the circuit traffic continued flying circuits afterwards.

Factual Background

The weather at Shawbury was recorded as follows:

```
METAR EGOS 091020Z 26008KT 9999 FEW012 BKN025 09/07 Q1022 NOSIG RMK BLU BLU=
TAF EGOS 090737Z 0909/0918 27007KT 9999 SCT040 PROB30 TEMPO 0909/0915 SCT022=
```

Analysis and Investigation

Military ATM

An Airprox occurred on 9 Feb 22 at approximately 1015 UTC, in the RAF Shawbury visual circuit between two Junos. Both Juno pilots were in receipt of an Aerodrome Control Service from the Shawbury Aerodrome Controller.

The Shawbury Aerodrome Controller was operating with four aircraft on frequency over two frequencies, the Aerodrome frequency, and a discreet/quiet aerodrome frequency as per local orders. Juno (A) was established on the quiet frequency conducting circuits to the main operating area, Juno (B) was the second of 3 visual joiners routing via the western VFR gate. A further aircraft was also conducting an IFR approach to the airfield with the Aerodrome Controller broadcasting the IFR positions, as expected, on both frequencies. Traffic Information was passed to Juno (B) as part of their joining clearance. Due to the position of the radar traffic, the Juno (B) pilot was instructed to make their approach to Area Right, however the Juno (B) pilot reported the initial transmissions were missed and reported as broken. The Juno (B) pilot did confirm the approach to Area Right. The Aerodrome Controller provided IFR clearance to the radar traffic when able and again broadcast the Traffic Information on both frequencies. The change of intentions for Juno (B) was not broadcast on Juno (A) pilot's frequency.

Although the Shawbury Supervisor did not witness the Airprox, because they were situated in the Approach Control Room, they did task two other Supervisor qualified Controllers to review the R/T after being notified of the Airprox. The Supervisor also reviewed the R/T to confirm that Traffic Information was passed correctly.

Figures 1 – 5 show the positions of the Junos at relevant times during the Airprox. The screenshots are taken from a replay using the NATS Radars which are not utilised by the Shawbury controllers, therefore, may not be entirely representative of the picture available.

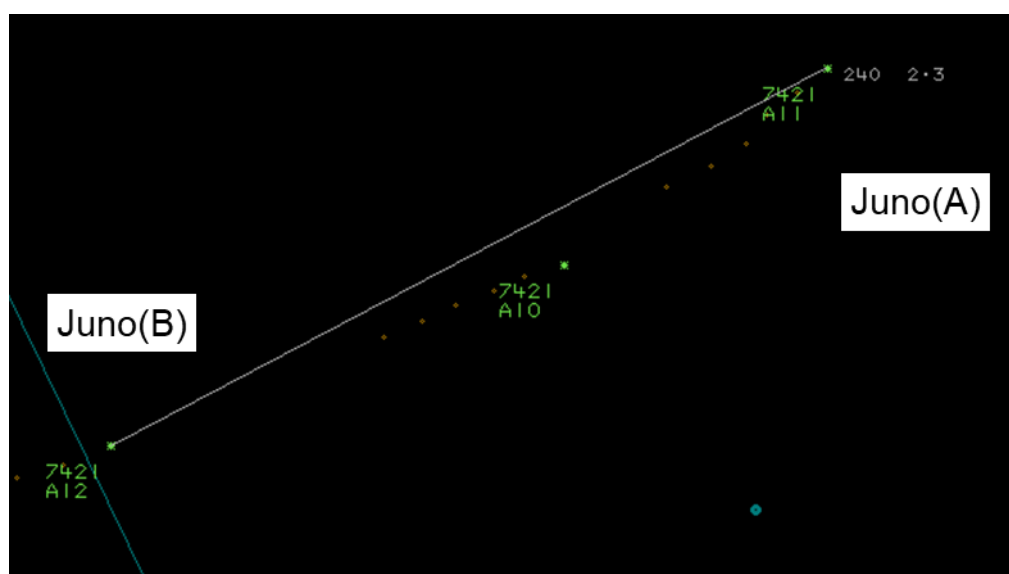


Figure 1: Juno (B) is instructed to make their approach to Area Right.

As part of the joining instruction to the Juno (B) pilot they were given Traffic Information detailing that there was “one other joining, one area right, Juno five and a half miles to land”. The join clearance was acknowledged by the Juno (B) pilot although only the one ahead was readback. The Aerodrome Controller broadcast the Juno (B) pilot’s intentions on the quiet frequency. Sixty-six seconds later the Juno (B) pilot was instructed to make their approach to Area Right, during this time the Aerodrome Controller gave a joining clearance to another VFR joiner providing them with accurate Traffic Information and assessed that the Juno (B) pilot would not have sufficient time to cross the runway ahead of the radar traffic. Separation was 2.3NM and 100ft.

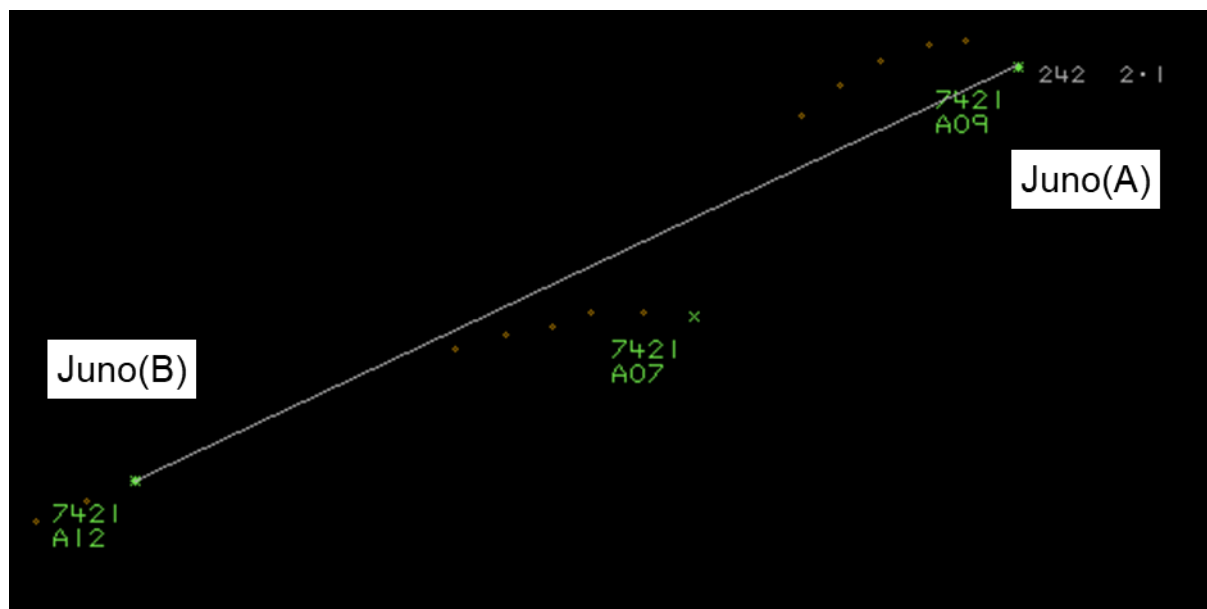


Figure 2: Juno (B) pilot acknowledges the change to Area Right.

Eighteen seconds later the Juno (B) pilot acknowledged the change to Area Right, delayed due to broken comms. Separation was measured at 2.1NM and 300ft.

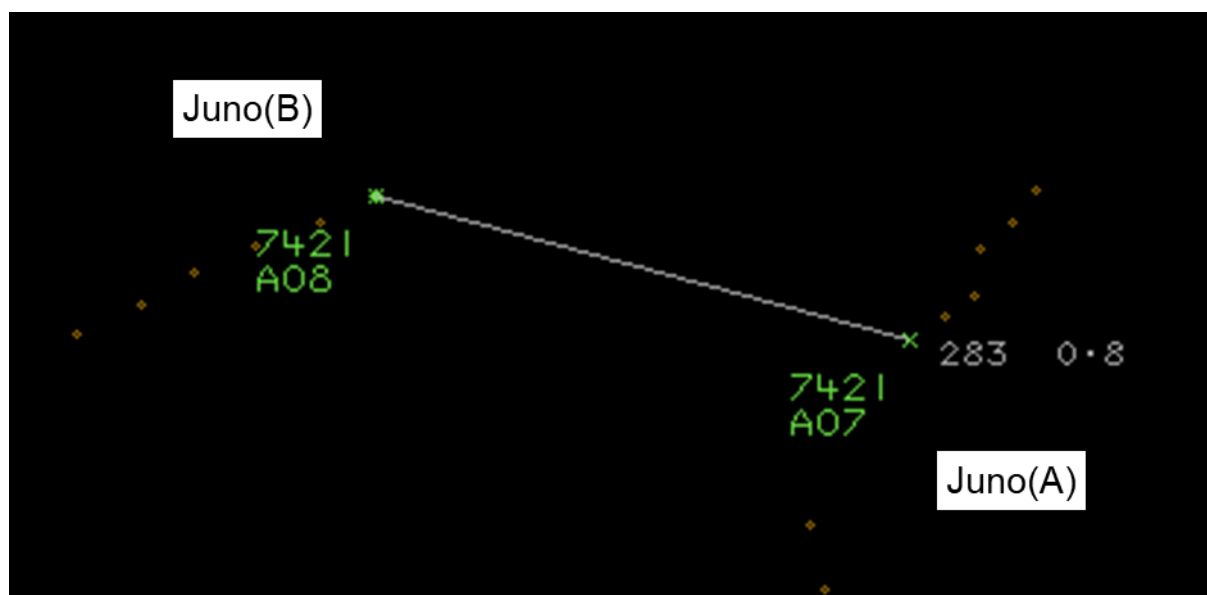


Figure 3: IFR traffic given a clearance

Thirty-nine seconds later the Aerodrome Controller provided a clearance to use the runway which was followed by a broadcast of intentions on both Aerodrome frequencies. Separation decreased to 0.8NM and 100ft.

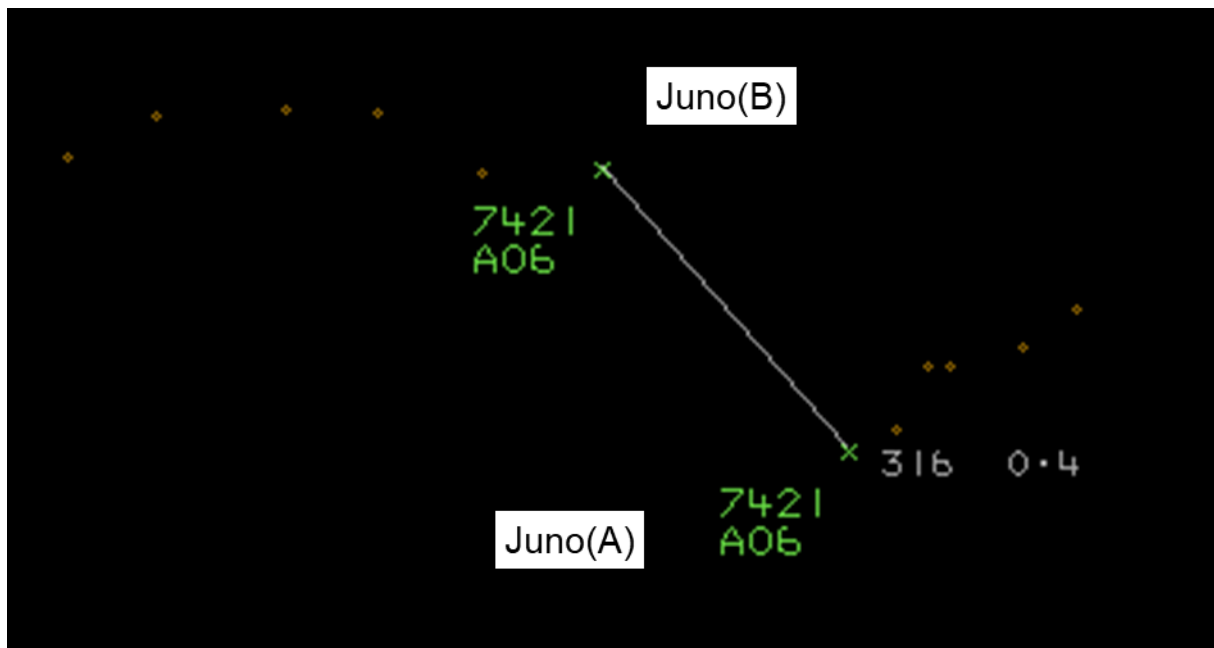


Figure 4: Juno (B) pilot broadcasts final to Area Right.

Fifteen seconds later the Juno (B) pilot broadcast that they were on final to Area Right, however, this was not broadcast on the Juno (A) pilot's frequency. Separation decreased to 0.4NM and 0ft.

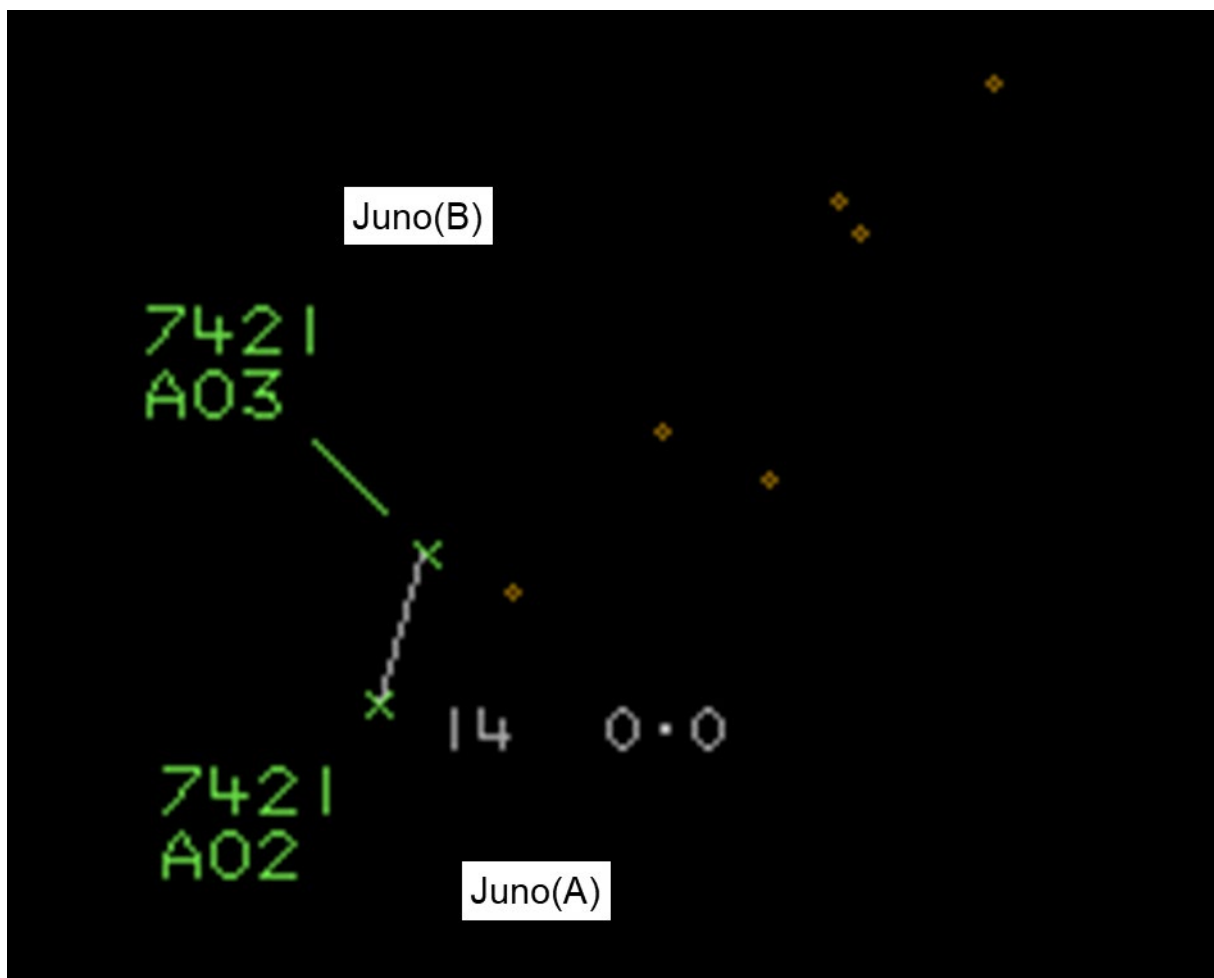


Figure 5: CPA.

Accurate Traffic Information was passed as per local orders to the Juno (B) pilot as they joined through the westerly gate. Traffic Information was also broadcast to the Juno (A) pilot after the initial joining clearance was issued to the Juno (B) pilot. The Aerodrome controller, identifying that there would be insufficient time to allow the Juno (B) to cross the runway ahead of the approaching IFR traffic acted appropriately by changing the landing area of the Juno (B) pilot. The Aerodrome controller should have broadcast on the quiet Aerodrome frequency to ensure the Juno (A) pilot was aware of the change of intentions of the Juno (B) pilot however this was not conducted. Although not directed to the Juno (B) pilot, further Traffic Information was passed to another VFR joining aircraft which specified again that there was one operating in Area Right although it is not known if this was assimilated by the Juno (B) pilot.

Single frequency ops may have provided better situational awareness to the Juno (A) pilot regarding the change of intentions of the Juno (B) pilot, however, this could inadvertently increase the R/T loading and be considered as a distraction for the Juno (A) pilot.

UKAB Secretariat

The Juno pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.⁴ An aircraft operated on or in the vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in operation.⁵

Occurrence Investigation

The RAF Shawbury Occurrence Investigation found the following cause, causal factors and mitigations:

Cause: Student pilot of the second aircraft chose to do a non-standard approach to the runway threshold which had him converging on the Juno already on short finals rather than joining in turn.

Causal factor: The second aircraft was initially expecting to cross for dispersal from the West but due to IF traffic inbound for Rwy 23 was told to hold short and join the Main Operating Area (MOA) to the NW of the in-use rwy. This unexpected change of plan for the trainee pilot meant they had to come up with a new plan at relatively short notice. Instead of joining in turn, i.e. turning downwind in a NE direction initially and then turning finals to parallel Rwy 23, for expediency they made a direct approach to the threshold of the out-of-use runway 18.

Mitigation: This occurrence has been partly discussed in crewrooms and instructors offices. It will be used as an example in an upcoming version of SKIES, the RAF Shawbury monthly Flight Safety Bulletin.

Causal factor: The two airprox aircraft were on separate frequencies despite being on the same airfield so intentions could not have been passed between aircraft.

Mitigation: There are well established procedures in place at RAF Shawbury where ATC re-broadcast traffic calls on the other channels. This was done and allowed the ac captains to look out for each other. This proved the re-broadcasting procedure was an effective barrier.

Comments

HQ Air Command

This Airprox was subject to a Local Investigation. Even though the pilot of Juno (B) didn't feel that the occurrence was an Airprox, the pilot of the Juno (A), established in the circuit, felt sufficiently uncomfortable that the safety of their aircraft was compromised; the CPA is certainly closer than would be expected with aircraft integrating in the circuit environment. Juno (B) had a clear plan to cross the main dispersal from the west but, due to IF traffic inbound for RW23, was told to hold short and join the Main Operating Area to the northwest of the in-use runway. This caused the student

⁴ AMC to MAA RA 2307 paragraphs 1 and 2.

⁵ AMC to MAA RA 2307 paragraph 17.

pilot to rapidly alter their plans and they elected to make a more direct approach to the threshold of RW18 for expediency, thereby causing the aircraft to converge. There are well established procedures in place at RAF Shawbury where ATC re-broadcast traffic calls on other channels. This was done and allowed the aircraft captains to look out for each other. This proved the re-broadcasting procedure was an effective barrier. As a result of this incident, it will be used as an example in an upcoming version of SKIES, the RAF Shawbury monthly Flight Safety Bulletin.

Summary

An Airprox was reported when 2 Juno pilots flew into proximity at RAF Shawbury at 1037Z on Wednesday 9th February 2022. Both pilots were operating under VFR in VMC, both in receipt of an Aerodrome Control Service from Shawbury Tower.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate operating authorities. Relevant contributory factors mentioned during the Board's discussions are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

The Board first discussed the Juno pilots' actions and agreed that Juno(B) had flown closer than would be expected in the visual circuit. Members agreed that their situational awareness had been inaccurate (**CF2**), in that they had initially thought Juno(A) was the joining IF traffic. They subsequently realised their error but were then faced with avoiding the Juno(A), established in Area Right. In doing so, members felt that the Juno(B) instructor had flown close enough to cause concern (**CF4**) and that the Juno(A) pilot had been concerned that the Juno(B) posed a risk of collision (**CF5**), no doubt compounded by their late sighting of the Juno(B) (**CF3**). The Shawbury controller was providing Traffic Information but missed a call to the Juno(A) pilot to inform them of the Juno(B) pilot's intentions (**CF1**). Members discussed the risk of operating on a frequency other than the Tower frequency whilst operating on an airfield, as was the case with Juno(A). It was acknowledged that this procedure was in common use in helicopter training and was required due to the risk of R/T interference in the flying training task. Nonetheless, members felt that this arrangement introduced a risk of a degree of loss of situational awareness and that thoughtful mitigation was required. Turning to risk, some members felt that the proximity of the 2 helicopters was such that safety had been much reduced, Risk B, whilst others felt that although the proximity was closer than desired, the Juno(B) pilot had taken action to avert collision and therefore that the risk was Risk C. After further discussion, the latter opinion prevailed. Lastly, members reiterated that an Airprox exists as soon as there is a perception that the distance between aircraft as well as their relative positions and speed have been such that the safety of the aircraft involved may have been compromised. The question then is not one of whether an Airprox has occurred, but rather of the risk and contributory factors, such that lessons identified can be used to enhance air safety in the UK.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2022015			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Ground Elements				
• Regulations, Processes, Procedures and Compliance				
1	Human Factors	• ATM Regulatory Deviation	An event involving a deviation from an Air Traffic Management Regulation.	Regulations and/or procedures not fully complied with
Flight Elements				
• Situational Awareness of the Conflicting Aircraft and Action				
2	Contextual	• Situational Awareness and Sensory Events	Events involving a flight crew's awareness and perception of situations	Pilot had no, late, inaccurate or only generic, Situational Awareness

• See and Avoid				
3	Human Factors	<ul style="list-style-type: none"> • Identification/Recognition 	Events involving flight crew not fully identifying or recognising the reality of a situation	Late sighting by one or both pilots
4	Human Factors	<ul style="list-style-type: none"> • Lack of Individual Risk Perception 	Events involving flight crew not fully appreciating the risk of a particular course of action	Pilot flew close enough to cause concern
5	Human Factors	<ul style="list-style-type: none"> • Perception of Visual Information 	Events involving flight crew incorrectly perceiving a situation visually and then taking the wrong course of action or path of movement	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: C.

Recommendation: Nil.

Safety Barrier Assessment⁶

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Ground Elements:

Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because the Shawbury Aerodrome controller did not pass Traffic Information on the Juno(B) pilot's change from Area Left to Area Right to the Juno(A) pilot.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the Juno(A) pilot did not have SA on the approaching Juno(B) and the Juno(B) pilot initially identified the Juno(A) as the joining IF traffic.

See and Avoid were assessed as **partially effective** because the Juno(B) instructor took late avoiding action as they converged on Juno(A).

⁶ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

Airprox Barrier Assessment: 2022015		Outside Controlled Airspace						
Barrier		Provision	Application	Effectiveness				
				Barrier Weighting				
				0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance	✓	⚠					
	Manning & Equipment	✓	✓					
	Situational Awareness of the Confliction & Action	✓	✓					
	Electronic Warning System Operation and Compliance	⊘	⊘					
Flight Element	Regulations, Processes, Procedures and Compliance	✓	✓					
	Tactical Planning and Execution	✓	✓					
	Situational Awareness of the Conflicting Aircraft & Action	✗	✓					
	Electronic Warning System Operation and Compliance	⊘	⊘					
	See & Avoid	✓	⚠					
Key:		<u>Full</u>	<u>Partial</u>	<u>None</u>	<u>Not Present/Not Assessable</u>	<u>Not Used</u>		
Provision	✓	⚠	✗	⊘				
Application	✓	⚠	✗	⊘				⊘
Effectiveness	█	█	█	█				□